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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,950	01/09/2002	Wilfred F. Brake	100110176-1	6376

7590 06/29/2005
HEWLETT-PACKARD COMPANY
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EXAMINER

DO, ANH HONG

ART UNIT PAPER NUMBER

2624

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/043,950

Applicant(s)

BRAKE ET AL.

Examiner

ANH H. DO

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6 and 7 is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-17 and 19-24 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Queiroz et al. (U.S. Patent No. 6,058,210) in view of Mitchell et al. (U.S. Patent No. 6,373,412) and Ferguson (U.S. Patent No. 6,052,555).

Regarding claim 1, Queiroz discloses:

- configuring a JPEG engine and performing JPEG processing on an uncompressed digital image to produce byte-aligned data, and reading this data (col. 7, lines 59-62, teaching an optional resource defined by JPEG comprising a specific and byte-aligned sequence of bits, and implicitly read to be inserted into the compressed bit stream).

Queiroz does not disclose expressly encoding DCT coefficients in a byte-aligned manner and converting the JPEG data to MPEG data.

Mitchell discloses a marker segment in accordance with the JPEG standard including a byte-aligned hexadecimal "FF" byte followed by "FFDB" representing DQT (define quantization table) (col. 5, lines 28-34), which implicitly refers to quantized DCT coefficients since in the compression process the result of quantization and DCT is a sequence of DCT coefficients (col. 6, lines 4-9).

And Ferguson discloses converting the JPEG data to MPEG data by transmitting different groups of JPEG compressed frame data to different processors for MPEG processing (col. 10, lines 1-3).

Queiroz & Mitchell & Ferguson are combinable because they are from JPEG encoding method.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to produce JPEG data encoding DCT coefficients in a byte-aligned manner and to convert the JPEG data to MPEG data in Queiroz as taught by Mitchell and Ferguson.

The suggestion/motivation for doing so would have been to accomplish the encoding and decoding process in much reduced time with reduced processing resources and hardware (Mitchell, col. 4, lines 11-14).

Therefore, it would have been obvious to combine Queiroz with Mitchell and Ferguson to obtain the invention as specified in claim 1.

Regarding claim 2, Ferguson teaches storing the MPEG data in an MPEG file to archival storage 54 (col. 5, lines 1-3).

Regarding claim 3, Queiroz teaches adding file header information to the MPEG file (col. 10, lines 41-43, teaching initializing a header in the MPEG file by a 4-byte sequence).

Regarding claim 4, Mitchell teaches JPEG engine is accomplished by specifying table generating values that are used by JPEG engine to generate Huffman code tables (col. 5, lines 28-34, teaching JPEG standard beginning with a byte-aligned hexadecimal byte followed by Huffman tables).

Regarding claim 5, Mitchell teaches providing Huffman code tables (corresponding to the conversion tables) for performing entropy encoding (which implicitly converts JPEG standard data to MPEG data) (col. 5, lines 17-20).

Regarding claim 8, Queiroz discloses:

- means for obtaining an uncompressed digital image (Fig. 1 shows a data compression system 4 for obtaining uncompressed digitized video signals);
- means for performing and configuring the JPEG processing to produce a byte-aligned data stream (col. 7, lines 59-62, teaching an optional resource defined by JPEG comprising a specific and byte-aligned sequence of bits).

Queiroz does not disclose expressly means for encoding DCT coefficients in a byte-aligned manner and for converting the JPEG data to MPEG data.

Mitchell discloses a marker segment in accordance with the JPEG standard including a byte-aligned hexadecimal "FF" byte followed by "FFDB" representing DQT (define quantization table) (col. 5, lines 28-34), which implicitly refers to quantized DCT

coefficients since in the compression process the result of quantization and DCT is a sequence of DCT coefficients (col. 6, lines 4-9).

And Ferguson discloses means for converting the JPEG data to MPEG data by transmitting different groups of JPEG compressed frame data to different processors for MPEG processing (col. 10, lines 1-3).

Queiroz & Mitchell & Ferguson are combinable because they are from JPEG encoding method.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to produce JPEG data encoding DCT coefficients in a byte-aligned manner and to convert the JPEG data to MPEG data in Queiroz as taught by Mitchell and Ferguson.

The suggestion/motivation for doing so would have been to accomplish the encoding and decoding process in much reduced time with reduced processing resources and hardware (Mitchell, col. 4, lines 11-14).

Therefore, it would have been obvious to combine Queiroz with Mitchell and Ferguson to obtain the invention as specified in claim 8.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 9-17 and 19-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Mitchell et al. (US. Patent No. 6,373,412).

Regarding claims 9, 10, 11 and 12, Mitchell discloses Huffman tables comprising Huffman codes, each Huffman code having a following bit pattern, the combined lengths of each Huffman code and corresponding bit pattern being an integer multiple of 8 bits (col. 7, lines 48-53, teaching Huffman code in Huffman tables would take 16 consecutive bits, and Fig. 2 shows AC and DC tables) and a marker segment in accordance with the JPEG standard including a byte-aligned hexadecimal "FF" byte followed by "FFDB" representing DQT (define quantization table) (col. 5, lines 28-34), which implicitly refers to quantized DCT coefficients since in the compression process the result of quantization and DCT is a sequence of DCT coefficients (col. 6, lines 4-9).

Regarding claims 13 and 14, Mitchell discloses a lookup table that correlates byte-aligned JPEG AC and DC and following bits with equivalent MPEG AC and DC coefficient codes (col. 5, lines 64-66, teaching providing LUTs to index into fields Huffman tables, which correlates a byte-aligned JPEG AC and DC coefficient codes as in col. 5, lines 28-35, and Figs. 2 shows AC and DC tables).

Regarding claim 15, Mitchell discloses a JPEG engine to produce bit patterns that encode DCT coefficients (col. 5, lines 15-20, teaching a JPEG standard engine to produce bit patterns that encode DCT coefficients), each bit pattern that encodes a DCT coefficient having a length that is an integer multiple of eight bits (col. 11, lines 56-59,

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teaching a bit pattern of up to 16 bits; and col. 7, lines 48-53, teaching Huffman code in Huffman tables would take 16 consecutive bits).

Regarding claim 16, Mitchell teaches a Huffman code (col. 5, lines 57-64).

Regarding claim 17, Mitchell teaches each bit pattern encoding non-zero DCT coefficients comprises a set of one or more following bits (col. 5, lines 28-34, teaching non-zero byte).

Regarding claim 19, Mitchell teaches JPEG software implementations (col. 11, lines 19-21).

Regarding claim 20, Mitchell teaches the JPEG data has a length that is an integer multiple of eight bits (col. 11, lines 56-59, teaching a bit pattern of up to 16 bits).

Regarding claim 21, Mitchell teaches producing the JPEG data (claim 4, col. 12, lines 46-47).

Regarding claim 22, Mitchell teaches encoding a run/value combination comprising Huffman code (col. 5, lines 57-64) and a following bit pattern that encodes a value for an AC DCT coefficient (col. 6, lines 24-33, teaching encoding a value for an AC DCT coefficient).

Regarding claim 23, Mitchell teaches each non-zero DC DCT coefficient is encoded by a bit pattern having a length that is an integer multiple of eight bits (col. 6, lines 16-21, teaching encoding the non-zero DC DCT coefficient; and col. 7, lines 48-53, teaching Huffman code in Huffman tables would take 16 consecutive bits).

Regarding claim 24, Mitchell teaches a lookup table that correlates byte-aligned JPEG AC and DC and following bits with equivalent MPEG AC and DC coefficient

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codes (e.g., using LUT to convert JPEG data to MPEG data) (col. 5, lines 64-66, teaching providing LUTs to index into fields Huffman tables, which correlates a byte-aligned JPEG AC and DC coefficient codes as in col. 5, lines 28-35, and Figs. 2 shows AC and DC tables).

Allowable Subject Matter

6. Claims 6 and 7 are allowed.

7. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

Regarding independent claim 6, the prior art, taken either singly or in combination, does not teach:

- a logic unit adapted to configure the JPEG engine... aligned manner and convert... MPEG I-frame.

Regarding claim 7, since it depends from claim 6, it is also allowable for the same reason.

Regarding claim 18, the prior art, taken either singly or in combination, does not teach:

- providing a table... MPEG format; and indexing into the table, using a bit pattern produced by the JPEG engine, in order to locate the corresponding MPEG pattern.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANH H. DO whose telephone number is 571-272-7433. The examiner can normally be reached on 5/4-9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID K. MOORE can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 27, 2005.



**ANH HONG DO
PRIMARY EXAMINER**